

CLAIMS

What is claimed is:

1. A pattern for an epitaxial layer over a semiconductor substrate layer, for monitoring epitaxial layer washout, comprising:

a first sub-pattern having a shape and defining one or more minimum dimensions, obfuscation of the first sub-pattern indicating that epitaxial washout has occurred at least for dimensions equal to or less than the one or more minimum dimensions; and

a second sub-pattern having the shape of the first sub-pattern but defining one or more maximum dimensions, obfuscation of the second sub-pattern indicating that epitaxial washout has occurred for dimensions equal to or less than the one or more maximum dimensions.

2. The pattern of claim 1, further comprising one or more additional sub-patterns, each additional sub-pattern having the shape of the first sub-pattern but defining one or more intermediary dimensions greater than the one or more minimum dimensions and less than the one or more maximum dimensions, obfuscation of a given sub-pattern of the one or more additional

sub-patterns indicating that epitaxial washout has occurred at least for dimensions equal to or less than the one or more intermediary dimensions of the given sub-pattern.

3. The pattern of claim 1, wherein the first sub-pattern comprises a pair of separated features, separation of which defines the one or more minimum dimensions.

4. The pattern of claim 3, wherein the pair of separated features is a pair of interlocking but separated L-shaped features.

5. The pattern of claim 1, wherein the second sub-pattern comprises a pair of separated features, separation of which defines the one or more maximum dimensions.

6. The pattern of claim 5, wherein the pair of separated features is a pair of interlocking but separated L-shaped features.

7. The pattern of claim 1, wherein the one or more minimum dimensions essentially consists of a horizontal dimension and a vertical dimension.

8. The pattern of claim 1, wherein the one or more maximum dimensions essentially consists of a horizontal dimension and a vertical dimension.

9. The pattern of claim 1, wherein the first sub-pattern comprises a pair of interlocking but separated L-shaped features, each of a first feature and a second feature of the pair including a first segment and a second segment, a distance between the first segment of the first feature and the first segment of the second feature defining a horizontal dimension of the one or more minimum dimensions, and a distance between the second segment of the first feature and the second segment of the second feature defining a vertical dimension of the one or more minimum dimensions.

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10. The pattern of claim 1, wherein the second sub-pattern comprises a pair of interlocking but separated L-shaped features, each of a first feature and a second feature of the pair including a first segment and a second segment, a distance between the first segment of the first feature and the first segment of the second feature defining a horizontal dimension of the one or more maximum dimensions, and a distance between the second segment of the first feature and the second segment of the second feature defining a vertical dimension of the one or more maximum dimensions.

11. A method for monitoring epitaxial layer washout comprising:  
patterning on an epitaxial layer over a semiconductor substrate layer a pattern including a series of sub-patterns defining a progressively decreasing one or more dimensions;  
locating a first sub-pattern of the series that is obfuscated by proceeding through the series of sub-patterns, the first sub-pattern defining one or more first dimensions; and  
setting one or more washout values as the one or more first dimensions of the first sub-pattern, such that dimensions less

67,200-607  
2001-0673

than the one or more washout values are concluded to be washed out on the epitaxial layer.

12. The method of claim 11, wherein the progressively decreasing one or more dimensions of the series of sub-patterns are uniformly spaced.

13. The method of claim 11, wherein each sub-pattern of the series of sub-patterns comprises a pair of separated features, separation of which defines one or more dimensions of the sub-pattern.

14. The method of claim 13, wherein the pair of separated features of each sub-pattern is a pair of interlocking but separated L-shaped features.

15. The method of claim 11, wherein one or more dimensions defined by each sub-pattern of the series of sub-patterns essentially consists of a horizontal dimension and a vertical dimension.

67,200-607  
2001-0673

16. The method of claim 11, wherein each sub-pattern of the series of sub-patterns comprises a pair of interlocking but separated L-shaped features, each of a first feature and a second feature of the pair including a first segment and a second segment, a distance between the first segment of the first feature and the first segment of the second feature defining a horizontal dimension of one or more dimensions defined by the sub-pattern, and a distance between the second segment of the first feature and the second segment of the second feature defining a vertical dimension of the one or more dimensions defined by the sub-pattern.

17. The method of claim 11, further initially comprising depositing the epitaxial layer over the semiconductor substrate layer.

18. The method of claim 17, wherein depositing the epitaxial layer over the semiconductor substrate layer comprises growing the epitaxial layer over the semiconductor substrate layer.

19. A semiconductor wafer comprising:

a semiconductor substrate layer;  
an epitaxial layer over the semiconductor substrate layer; and  
a series of sub-patterns patterned on the epitaxial layer and  
having pairs of separated features, separation of which defines  
progressively decreasing one or more dimensions,

wherein encountering obfuscation of a first sub-pattern of the  
series in proceeding through the series indicates that epitaxial  
washout has occurred for other features patterned on the  
epitaxial layer having dimensions equal to or less than one or  
more dimensions of the first sub-pattern.

20. The wafer of claim 19, wherein the pairs of separated  
features of the sub-patterns of the series are each a pair of  
interlocking but separated L-shaped features.